ELECTRICAL AUTOMATION SYSTEMS TOWARDS INTELLIGENT AND ENERGY EFFICIENCY APPLICATIONS

Musse Mohamud Ahmed

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APPLICATIONS

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CHAPTER 8

REMOTE TERMINAL UNIT (RTU)

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Chapter 8 explains about the Remote Terminal Unit (RTU) design requirements, its hardware development, extension boards, digital input module, input/output modules, software configuration and hardware setting and some results from the developed system.

8.1 System Design Requirement

The RTU system has been summarized in Table 8.1 and it is a self explanatory.

Table 8.1: System Design Requirement

No.	Item	Parameters Specification
1	Operating Voltage	30VDC (RTU & I/O Modules), 240VAC (Loads)
2	Digital Output Channels	Service Substation Panel: 11 channels Customer Service Substation Panel: 8 channels
3	Digital Input Channels	Service Substation Panel: 1 channel Customer Service Substation Panel: 1 channel
4	Communication Interface RS485, TCP/IP	Communication Ports: Com1, Com2, Com3 Baud Rate:9600, Speed: 10Mbps or 100Mbps
5	PC-based SCADA Controller	Power supply: 10 to 30VDC Operating System: Window NT/XP/CE, Speed: 40MHz Memory: 512Kbytes, Ethernet port: 10 BaseT Serial Port: Com 1, Com 2, Com 3 Protocol: Modbus serial protocol, Modbus TCP/IP protocol
6	LAN Configuration	Hub: Four-port of 10Mbps or 100Mbps Speed: 10 Mbps or 100Mbps
7	Sensor/Transducer Devices	CT 60/5A, 24VDC Relay, 3-Phase Contactor
8	Measurement Parameters	Phase Voltage, Phase Current
9	PC	Operating System: Windows NT/2000/XP/CE Memory: Minimum of 256MB Hard disk space: Minimum of 500MB Processor: Compatible with Intel Pentium IV or higher